

CUSTOMER SUCCESS STORY | DIGITALGLOBE

DIGITALGLOBE ENHANCES PRODUCTIVITY WITH NVIDIA GRID



High-performance virtualized desktops transform daily tasks and drastically improve staff efficiency.

ABOUT DIGITALGLOBE



FIVE REASONS FOR NVIDIA GRID

- > Give Linux and Windows users better-performing virtual machines (VMs)
- > Lower latency on graphics-intensive apps, office productivity apps, and streaming videos
- > Improve density without buying new GPU hardware
- > Quickly deploy thin clients to new users and enable them to access any application from anywhere
- > Achieve a 500:1 ratio of users to IT with and simplified management and end-to-end monitoring

With the most sophisticated commercial satellite constellations in orbit, DigitalGlobe is the world's leading provider of high-resolution Earth imagery, data, and analysis. Thanks to best-in-class technology and a 16-year time-lapse image library, the company is a trusted partner of a wide range of industries worldwide. Its customers include numerous U.S. government agencies, which use its global imagery for environmental monitoring, mapmaking, defense, and public safety. In addition to a reputation for stellar photography, in recent years, the company has made a name for itself developing innovative applications and systems that leverage its images.

SUMMARY

- > DigitalGlobe takes satellite photos and develops applications and systems to leverage that imagery.
- > Security requirements led the company to have all users on a virtualized platform.
- > Over the years, increased demand for video and graphics-intensive apps contributed to poor system performance.
- > The company began leveraging NVIDIA GRID® to lower CPU utilization, improve performance, and give staff the ability to collaborate more effectively.

CUSTOMER PROFILE



Company
DigitalGlobe

Industry
Government

Location
Westminster, CO

Size
2,500
employees

Website
digitalglobe.com



SOFTWARE

Hypervisor: VMware vSphere
ESXi 6

Graphics Acceleration:
NVIDIA GRID Virtual PC and
GRID Virtual Apps

HARDWARE

Server: Nutanix 3350 and Dell
PowerEdge R720 and R730

GPU: NVIDIA® Tesla® M10

CHALLENGE

With the U.S. government as a major customer, DigitalGlobe handles proprietary, restricted data and code on a daily basis. As a result, security is a top priority. Years ago, the company rolled out a virtual desktop infrastructure (VDI) environment to ensure it always had 100 percent control over its data. However, this environment has really started to show its age over the past several years, because the company's technical needs have changed. "We hadn't been regularly checking in with our users about how they were using their desktops. In the interim, their needs had grown," said Mike Bantz, engineer and technical lead for VDI environments at DigitalGlobe.

Due to the nature of its business, DigitalGlobe's developers and office staff use graphics-intensive applications on a daily basis. In addition to Google Earth, they use Microsoft Office 2016, SAP, and numerous in-house apps to visually navigate the company's extensive image archives. Like many companies today, DigitalGlobe is also increasingly using video to livestream events and do video conferencing and training.

After speaking to users, Bantz discovered that "not only were people using more web and graphics-intensive apps, they also wanted to use Linux desktops." And the company's reliance on a visual environment was only going to get bigger in the years ahead: "Like a lot of companies, we're moving more toward web app development. That means our usage of the visual environment is only going to grow. Essentially, DigitalGlobe has become a software development company that takes really great pictures."

“Thanks to NVIDIA GRID technology, now everyone can be just as productive from home as they can from the office. Plus working collaboratively is so much easier.”

Mike Bantz,
Engineer / Technical
Lead for VDI
Environments,
DigitalGlobe

The aging environment was impacting productivity at every level of the company. It wasn't just DigitalGlobe's developers and office staff struggling with slow performance and limited mobility. Its three-person IT team lost productivity because it was constantly troubleshooting. Plus, as new offshore development teams were hired, the team was spending extensive time on the complicated setup of VPNs and dedicated connections to new offices.

“The hardware just couldn't keep up with the increased demand. Plus, the software we were using to manage the image on top of it was antiquated. Basically, we'd been running virtual desktops with no graphics cards behind them on a system that was way overprovisioned for years. Something needed to change,” said Bantz.

SOLUTION

Bantz and his team began looking at ways to refresh DigitalGlobe's infrastructure. They turned to NVIDIA to deploy a better end-user experience to the development team. Said Bantz, “We had people pushing for more Linux desktops. Unfortunately, Linux isn't very efficient to run in a VDI environment. It takes a lot more resources to get a good functional desktop. When we did some investigating, we discovered that we could leverage the NVIDIA GRID K1 cards already in our Dell hosts to make Linux perform better.”

After the NVIDIA GRID K1 GPUs were installed, performance improved. And within three to four months, Linux VDI was incredibly popular. However, this posed a new challenge to Bantz's team. Instead of using their Linux desktops to jump over to the company's factory workloads, users began using them to set up their own development environments. At that point, Bantz and his team realized that they couldn't get away with using their older infrastructure. As they searched for a solution, NVIDIA Tesla M10 GPUs were released.

“When we initially tested the NVIDIA Tesla M60 GPUs, we were blown away. We said, ‘If the Tesla M10 GPUs can do one-fifth of what an M60 can do—and give us the ability to put 50 to 60 users onto a single host—this is a no-brainer.’ We purchased 640 NVIDIA GRID software licenses. Soon DigitalGlobe made the decision that, as it refreshed its Windows environment, it would purchase 30 Tesla M10 cards to give virtual GPUs to every Windows desktop,” said Bantz.

“DigitalGlobe relies on NVIDIA GRID. GRID is essential for any company that wants to give its knowledge workers great performing desktops on a daily basis.”

Mike Bantz,
Engineer / Technical
Lead for VDI
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DigitalGlobe

Looking at upgrading the hardware, Bantz and his team discovered they could save on costs by using Nutanix hyperconverged infrastructure. “Nutanix brings a tremendous amount of integrations, efficiencies, control, stability, and speed. Now we don’t have to focus on maintaining the backend hardware. Instead, we can use our time to build a good desktop. Plus, deploying Nutanix could be done in a day. Installing the NVIDIA Tesla M10 drivers was plug-and-play.”

RESULTS

Thanks to the incredible performance of the Linux desktops, Bantz and his team haven’t had any problem switching users to the environment. “We were so happy with our NVIDIA M10 virtual GPU-backed Linux desktops that we gave a series of presentations about them. Afterwards, we couldn’t keep up with requests—everyone wanted to be moved over.”

For users, the biggest selling points are how the new desktops handle imagery and videos. “Our users are constantly accessing world maps to see layers of where our satellites have taken imagery and where they haven’t. They navigate those images by panning out and moving around. Prior to NVIDIA GRID, they couldn’t see some of the layers in Google Earth. Now it’s as easy as opening up the app and navigating to where they want to go. As for videos, users are thrilled that they can use VDI to watch them at home or on the road from any of their devices,” said Bantz.

The IT team is pleased with how the new VDI environment handles increased demand when users are working from home and in the office. “Here in Colorado when a big snowstorm hits, our VDI environment usage ramps up considerably. Thanks to NVIDIA GRID, now everyone can be just as productive from home. Plus working collaboratively with people is so much easier. You can walk into a meeting room, sign into a thin client, and access your presentation or notes instantly. It doesn’t matter if everyone is streaming video or using Messenger at the same time. The system easily handles the extra demand. In the old environment, firing up a company-wide, streaming town hall meeting brought down their entire VDI environment,” said Bantz.

The team also appreciates how manageable the system is: “We’re focused on VDI for all the good things it provides—portability, security, and manageability. With NVIDIA virtual GPU metrics integrated into third-party monitoring tools, we get better insight into our VDI environment. We can even see consumption down to the application level: who is using more or less resources, as well as right-size allocation for a better user experience. This ultimately eliminates waste. Thanks to NVIDIA and Nutanix, we have a team of 3.5 people who easily manage 1,500 users daily between the Linux and Windows VDI environments. That’s a 500-to-1 management philosophy. You don’t get that anywhere. It’s a huge cost savings in administrative time,” said Bantz.

DigitalGlobe is excited about the possibilities for the future. Said Bantz, “By upgrading from K1 to M10 GPUs, we doubled our user density, which means that we’ll be able to support more virtual desktops with the same number of servers. Plus, as we start moving over to Windows 10, NVIDIA GRID will be a tremendous asset to keeping everything running smoothly. At this point, DigitalGlobe relies on NVIDIA GRID technology. It’s a requirement for our infrastructure. It really is that good. And it’s not just for niche-use cases. I’d say NVIDIA GRID is essential for any company that wants to give its knowledge workers great performing desktops on a daily basis to keep them productive and happy.”

To learn more about NVIDIA virtual GPU solutions visit:
www.nvidia.com/virtualgpu

www.nvidia.com



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